

**IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

THE TRUSTEES OF PURDUE  
UNIVERSITY,

Plaintiff,

v.

STMICROELECTRONICS  
INTERNATIONAL N.V., and  
STMICROELECTRONICS, INC,

Defendants.

CIVIL ACTION NO. 6:21-CV-00727-ADA

PUBLIC VERSION

JURY TRIAL DEMANDED

**PLAINTIFF'S MOTION  
FOR SUPPLEMENTAL CLAIM CONSTRUCTION**

**FILED UNDER SEAL**

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<b>Exhibit No.</b>	<b>Description</b>
1	U.S. Patent No. 7,498,633
2	July 14, 2023 Expert Report of Dr. Dean Neikirk (excerpts)
3	June 9, 2023 Expert Report of Dr. Lori Lipkin (excerpts)
4	November 3, 2022 Deposition Transcript of Dr. Asmita Saha (excerpts)
5	May 2, 2023 Deposition Transcript of Mario Saggio (excerpts)
6	August 7, 2023 Memorandum Opinion and Order <i>The Trustees of Purdue University v. Wolfsped, Inc.</i> , Case 1:21-cv-840 (MDNC)
7	Expert Declaration of Dr. Stanley Shanfield <i>The Trustees of Purdue University v. Wolfsped, Inc.</i> , Case 1:21-cv-840 (MDNC)
8	March 17, 2023 Deposition Transcript of Dr. Stanley Shanfield <i>The Trustees of Purdue University v. Wolfsped, Inc.</i> , Case 1:21-cv-840 (MDNC)

## **I. Introduction**

Plaintiff the Trustees of Purdue University (“Purdue”) respectfully requests supplemental claim construction under *O2 Micro Int’l. Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351 (Fed. Cir. 2008) of two claim terms and a ruling that dependent claim 10 is not indefinite. It is clear from expert discovery that the parties and their respective experts dispute the plain and ordinary meaning of “a JFET region defined between the first source region and the second source region” and “a [first/second] source electrode formed over the [first/second] source region, the first source electrode defining a longitudinal axis” in asserted claims 9 and 10 of U.S. Patent No. 7,498,633 (“the ’633 Patent”), attached as Exhibit 1. The parties also dispute whether the language “about one micrometer” in claim 10 is indefinite.

Purdue’s interpretation of these terms is faithful to the intrinsic record and consistent with the understanding of a person of ordinary skill in the art. By contrast, Defendants and their experts read the claims inconsistently from each other and ignore the specification and basic knowledge of the skilled artisan. Indeed, Defendants’ interpretation of the terms is inconsistent with fundamental aspects of DMOSFET design physics. Given that application of plain and ordinary meaning does not resolve the parties’ dispute and instead creates a dispute as to claim scope, supplemental claim construction is warranted.

As to claim 10, the term “about one micrometer”—when read in light of the specification delineating the patent—informs with reasonable certainty those skilled in the art about the scope of the invention. Defendants cannot meet their clear and convincing burden by exhuming arguments buried by this Court in finding claim 9 definite.

## **II. Background**

Purdue asserts claims 9 and 10 of the ’633 Patent. Claim 9 states:

9. A double-implanted metal-oxide semiconductor field-effect transistor comprising:

a silicon-carbide substrate;

a drift semiconductor layer formed on a front side of the semiconductor substrate;

a first source region;

a first source electrode formed over the first source region, the first source electrode defining a longitudinal axis;

a plurality of first base contact regions defined in the first source region, each of the plurality of first base contact regions being spaced apart from each other in a direction parallel to the longitudinal axis defined by the first source electrode;

a second source region;

a second source electrode formed over the second source region, the second source electrode defining a longitudinal axis;

a plurality of second base contact regions defined in the second source region, each of the plurality of second base contact regions being spaced apart from each other in a direction parallel to the longitudinal axis defined by the second source electrode; and

a JFET region defined between the first source region and the second source region, the JFET region having a width less than about three micrometers.

Ex. 1 at cl. 9. Asserted claim 10 depends from claim 9 and adds: “The double-implanted metal-oxide semiconductor field-effect transistor of claim 9, wherein the JFET region has a width of about one micrometer.” *Id.* at cl. 10.

**A. Defendants’ Departure from Plain and Ordinary Meaning**

During initial claim construction proceedings, the parties presented two disputes to the Court related to the asserted claims. The parties disputed (1) whether the preamble—“double-implanted metal oxide semiconductor field effect transistor”—was limiting and (2) whether the term “less than about three micrometers” in claim 9 was indefinite. Dkt. 220 at 20, 25. The Court ruled that the preamble was limiting and that the claim term was not indefinite. *Id.* at 25, 31. The parties did not

raise, and the Court did not resolve, any other claim construction disputes. Thus, the parties ostensibly applied the plain and ordinary meaning of the remaining claim terms.

In accordance with the Scheduling Order in this case, the parties exchanged opening expert reports on June 9, 2023, and rebuttal expert reports on July 14, 2023. In his rebuttal report, Defendants' non-infringement expert, Dr. Neikirk, opined that [REDACTED]

[REDACTED] See Ex. 2 (Neikirk Report) at ¶¶ 402-411. Dr. Neikirk also opined that [REDACTED]

[REDACTED]. *Id.* at ¶ 390. According to Dr. Neikirk, [REDACTED]

[REDACTED]. *Id.* [REDACTED]

In reaching these opinions, Dr. Neikirk relies on an interpretation of the claim language that is inconsistent with the plain and ordinary meaning of the claim terms, inconsistent with the specification, inconsistent with ST's positions in its *Markman* briefing, and inconsistent with the understanding of a skilled artisan, including [REDACTED]

[REDACTED]. Dr. Neikirk purports to be applying the plain and ordinary meaning but is ignoring fundamental principles of semiconductor physics. Supplemental claim construction is required to prevent perversion of the claim language and misapplication of plain and ordinary meaning of claim terms, which risks confusing and misleading the jury.

**B. Defendants' Expert Raised Indefiniteness of Claim 10**

Purdue moved for leave to add claim 10 to this case in October 2022. Dkt. 159. In December 2022, the Court granted the motion over Defendants' objection. Dkt. 206. Defendants did not seek additional claim construction at the time. Defendants then served the expert report of their invalidity



expert, Dr. Lori Lipkin, [REDACTED]. Ex.

3 (Lipkin Report) at ¶ 855. Dr. Lipkin asserts many of the same arguments against claim 10 that were rejected by this Court in finding claim 9 not indefinite.

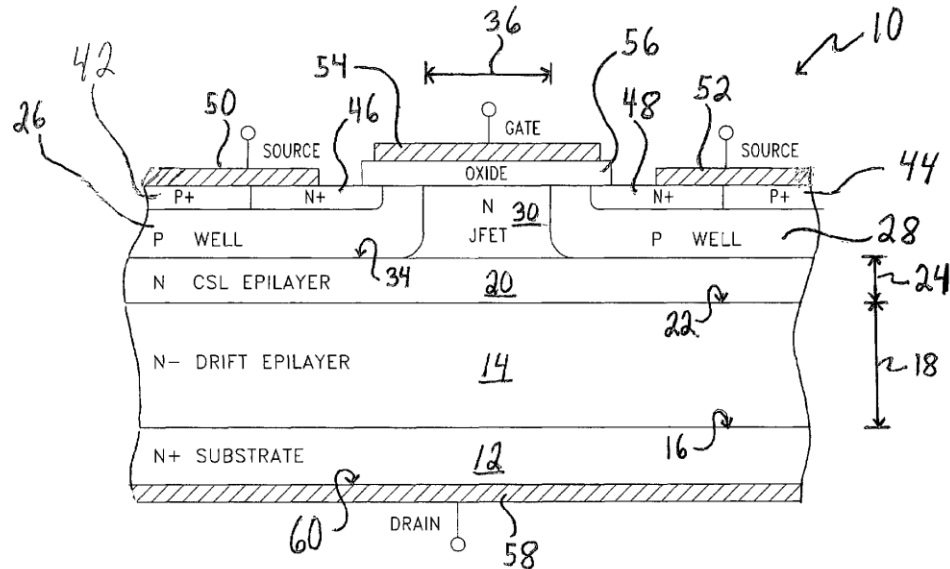
### III. Claim Construction Disputes

#### A. The JFET Region is Bounded By the P Wells

<b>Term</b>	“a JFET region defined between the first source region and the second source region”
<b>Dispute</b>	The parties dispute the boundaries of the JFET region.
<b>Purdue’s Proposal</b>	“the region formed between the P wells and located between the first and second source regions”

Claim 9 states that the JFET region is “defined between the first source region and the second source region.” The specification and the common understanding of a skilled artisan in the field confirm, however, that the while the JFET region is defined, or located, between the first and second source regions, the JFET region does not extend into the P wells to abut the N+ source regions. Instead, the JFET region is the region formed and bounded by the P wells on either side.

Figure 1 and the accompanying text confirm that the JFET region is formed between the P wells. Label **36** of Figure 1 is described as indicating the width of the JFET region **30**. *See, e.g.*, Ex. 1 at 6:21-24 (“In some embodiments, the JFET region **30** is also fabricated to have a short width **36** relative to a typical DMOSFET device, which may reduce the specific on-resistance of the semiconductor device **10**.”); *see also id.* at 6:24-2 (“For example, in some 25 embodiments, the JFET region **30** has a width **36** that is about three micrometers or less. In one particular embodiment, the JFET region **30** has a width **36** of about one micrometer.”).



Nothing in Figure 1 even hints that the JFET region invades the P wells and comes close to abutting the N+ source regions. Indeed, the specification further confirms that “[t]he semiconductor device **10** also includes two doped semiconductor wells or base regions **26**, **28** formed above the current spreading layer **20** and a junction field-effect transistor (JFET) region **30** formed between the wells **26**, **28**.”). Ex. 1 at 5:23-26; *see also id.* at 6:3-5 (“The remaining region of the additional epitaxial layer between the wells **26**, **28** forms the JFET region **30**.”). Given this clear intrinsic record, Purdue has consistently interpreted the claim language consistent with the specification, *i.e.*, that the JFET region is the area formed between the P wells. *See* Dkt. 345 (“At the hearing that resulted in the February amendments, Purdue and its expert specifically stated that to evaluate infringement, “You want to look at the distance between the P wells.” ECF No. 246 at 37:6-9.”).

Purdue’s interpretation of the claim language that the JFET region is formed between the P wells, meaning its width is the distance between the P wells, is consistent with the understanding of a skilled artisan. In addition to Purdue’s expert, Dr. Dhar, quoted above by the Court, other skilled artisans have the same understanding. Named Inventor Dr. Asmita Saha testified that after implanting a source and P well, “the region between the two P wells is your JFET region.” *See* Ex. 4 (Saha Dep.

Tr.) at 40:16-25. [REDACTED]

[REDACTED] REDACTED

[REDACTED]. Ex. 5 (Saggio Dep. Tr.) at 69:15-16 [REDACTED]

*see also id.* at 69:20-23 [REDACTED]

[REDACTED]; *id.* at 71:20 [REDACTED]

[REDACTED]"); *id.* at 120:21-22 [REDACTED]

[REDACTED]t."); *id.* at 121:2-4 [REDACTED]

[REDACTED] *id.* at 124:21-25 [REDACTED]

[REDACTED]

[REDACTED].").

Moreover, in their claim construction briefing, Defendants relied on Figure 1 as describing “the claimed semiconductor device” and provided the Court with a color annotated version of Figure 1, reproduced below.

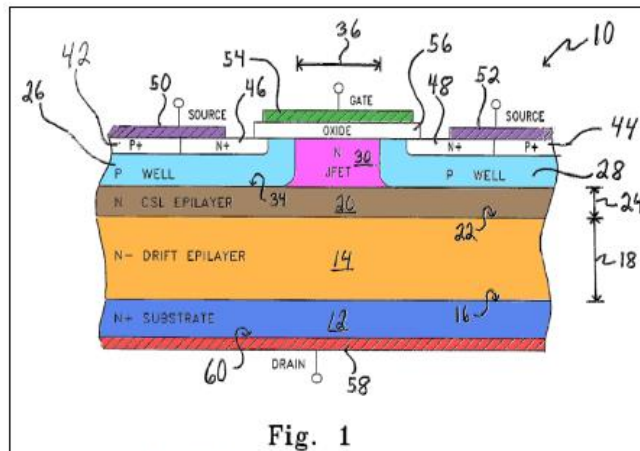


Fig. 1  
 (Ex. C: '633 Patent at Fig. 1, annotated)

Dkt. 66 at 12. Defendants told the Court that “the device includes the following elements,” highlighted the JFET region between (but not including) the P wells in pink, and echoed the specification’s description, saying the JFET region is “the region between the wells 26 and 28.” *Id.*; *see also id.* at

12-13 (limiting the JFET region to (30) in Figure 1, the area between the P wells).<sup>1</sup> Defendants’ admission that JFET region in the “claimed semiconductor device” was the region between the P wells as set forth in the specification, combined with their decision not to seek construction (or any judicial guidance) of the term, reasonably led Purdue to believe that Defendants interpreted the claim language consistent with the specification and the understanding of the skilled artisan that the JFET region was the region formed between the P wells.

Now, trying to avoid infringement, Defendants and their expert construe the claimed JFET region to include more than just the region formed between the P wells. Dr. Neikirk opines that REDACTED

REDACTED

REDACTED

REDACTED Ex. 2 (Neikirk Report) at ¶ 393 (emphasis added). That is, according to Dr. Neikirk,

REDACTED. *Id.* at ¶ 395. Dr. Neikirk acknowledges both that REDACTED,

*id.* at ¶ 394, and that REDACTED

REDACTED, but he nonetheless opines that “REDACTED

REDACTED.” *Id.* at ¶ 396.

As a threshold point, the Court should not permit Defendants’ flip-flop. In their claim construction brief, Defendants represented both to this Court and Purdue that it understood that the JFET region was between the P wells in the claimed semiconductor device. Dkt. 66 at 12. Defendants should not be permitted to go back on the representation in their *Markman* brief on a material issue that resulted in the question not being presented to the Court during original proceedings.

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<sup>1</sup> The Court used this annotated version of Figure 1 in its claim construction order. Dkt. 220 at 2.

Putting aside the Defendants' departure from their prior representation, Dr. Neikirk improperly reads the language of Claim 9 in a vacuum, ignoring the specification and the undisputed understanding of the skilled artisan, especially when purporting to apply the plain and ordinary meaning of a term. The Court should construe the term such that the JFET region is "the region formed between the P wells and located between the first and second source regions."

Defendants' blind reliance on their interpretation of the claim language that ignores the teachings of the specification runs afoul of several bedrock claim construction principles. As this Court is well-aware, *Phillips* teaches that "claims must always be read in light specification" and the specification is "the primary basis for construing the claims." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005). Indeed, a decade before *Phillips*, the Federal Circuit held that "it is legal error to construe a claim by considering it in isolation" and that a "claim must be read in view of the specification of which it is a part." *Bell Commc'ns Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 621 (Fed. Cir. 1995) (emphasis added); *see also On Demand Machine Corp. v. Ingram Industries, Inc.*, 442 F.3d 1331, 1344 (Fed. Cir. 2006) ("Care must be taken lest word-by-word definition, removed from the context of the invention, leads to an overall result that departs significantly from the patented invention."); *ICU Med., Inc. v. Alaris Med. Sys.*, 558 F.3d 1368, 1374 (Fed. Cir. 2009) (noting that it is "appropriate to rely heavily on the written description for guidance as to the meaning of the claims") (quoting *Phillips*). In this case, the specification consistently describes the JFET region as the area between the P wells.

Moreover, a claim interpretation inconsistent with the specification is very likely erroneous. In *Wi-Fi One, LLC v. Broadcom Corporation*, 887 F.3d 1329, 1345 (Fed. Cir. 2018), the Federal Circuit rejected the patentee's construction based on the plain text of the claim language because it did "not make sense in light of the specification." The Court held: "Based on the full teaching of the

specification, we conclude that Wi-Fi’s proposed construction of claim 15 is unreasonable.” *Id.* at 1346. The Court added that while “the language of claim 15, standing alone, provides some support for Wi-Fi’s interpretation,” it adopted a broader construction “in order to be faithful to the invention disclosed in the specification.” *Id.* at 1346; *see also ERBE Elektromedizin GmbH v. ITC*, 566 F.3d 1028, 1034 (Fed. Cir. 2009) (rejecting patentees’ construction of claim term as “inconsistent with the figures in the specification”); *Gen. Am. Transp. Corp. v. Cryo-Trans, Inc.*, 93 F.3d 766, 770 (Fed. Cir. 1996) (reversing district court’s construction, “which was inconsistent with the specification and drawings”). The Federal Circuit’s reasoning in *Wi-Fi* applies in this case. While the plain text of the claim language might provide some support for Defendants’ and Dr. Neikirk’s interpretation, the construction most faithful to the invention as described in the specification is that JFET region is bounded by the P wells.

Finally, Defendants’ counsel and their expert appear to be the only ones who believe that the JFET region can exceed the P wells and abut the N+ regions. [REDACTED]

[REDACTED] REDACTED

[REDACTED] Ex. 5 ([REDACTED] Dep. Tr.) at 121:2-4. [REDACTED]

[REDACTED]. *See, e.g., Ultimax Cement Mfg. Corp. v. CTS Cement Mfg. Corp.*, 587 F.3d 1339, 1348 (Fed. Cir. 2009) (citing [REDACTED] use of the word “anhydrite” when they mean “anhydrite” with “no resulting confusion”). [REDACTED]

[REDACTED] is compelling extrinsic evidence—consistent with the specification—demonstrating that Defendants’ interpretation should be rejected.

Defendants likely will try to leverage the claim language’s use of “defined between” to argue that the source regions constitute the boundaries of the JFET region. But again, this argument ignores the specification (and the extrinsic evidence), and any interpretation of “defined between” must be

consistent with the intrinsic record. In *Nat. Steel Car Ltd. v. Freightcar Am., Inc.*, 2017 WL 2480709, at \*4-5 (N.D. Cal. June 8, 2017), the court rejected the infringer’s proposed construction of “defined/defining” as “entirely delineating the exclusive boundaries of” because it was inconsistent with the specification. The court found that the word “defined” was “not used in its exclusive sense.” *Id.*; see also *Inland Diamond Products Co. v. Hoya Optical Labs of America, Inc.*, 2018 WL 2287555, at \*11-12 (E.D. Tex. May 18, 2018) (rejecting accused infringer’s argument that “defined by” meant “completely specified by”).

Moreover, construing the JFET region to be bounded by the P wells is consistent with the claim language because the region bounded by the P wells is located between the source regions, as shown in Figure 1 above. On August 7, 2023 (the day before the deadline for this motion), the court in the related case *The Trustees of Purdue University v. Wolfspeed, Inc.*, Case No. 1:21-cv-840 (MDNC) addressed a similar dispute between the parties regarding this claim term. Wolfspeed argued that this term was indefinite given an alleged inconsistency between the claim language and the specification. Ex. 6 (Mem. Op. and Order) at 22. The court, Judge Osteen, disagreed, rejected the indefiniteness argument, and ruled that “there is no inconsistency between the claim term and the specification rendering the claim term indefinite.” *Id.* at 26. Judge Osteen found that “the JFET region 30 is bounded on the left by p-well 26 and on the right by p-well 28” and “between the first source region on the left and the second source region on the right.” *Id.* at 27-28; see also *id.* at 28 (“As a result, the JFET region must fall between the P-wells, as well as the first and second source regions...”). He added that the claim language and the specification (stating that the JFET region is between the P wells) “are not inconsistent such that a person skilled in the relevant art or the public would be unable to understand the scope of the claim.” *Id.* at 28. Thus, Purdue’s view of the “plain and ordinary

meaning” is the only interpretation faithful to the entirety of both the intrinsic and extrinsic records. Defendants’ misuse of the “plain and ordinary” meaning of the claim term must be corrected.

**B. The First/Second Source Electrodes Need Not Be Physically or Electrically Distinct**

<b>Term(s)</b>	“a first source electrode formed over the first source region”/ “a second source electrode formed over the second source region”
<b>Dispute</b>	The parties’ dispute whether the first/second electrodes must be physically and electrically distinct and separate.
<b>Purdue’s Proposal</b>	Plain and ordinary meaning but that the first and second electrodes need not be physically or electrically disconnected.

[REDACTED]. See, e.g., Ex. 2 (Neikirk Report) at ¶¶ 269-271, 339. Thus, according to Dr. Neikirk, [REDACTED]

[REDACTED] [REDACTED] [REDACTED]”<sup>2</sup> Again, the specification counsels strongly against Defendants’ interpretation.

The use of “first” and “second” does not mandate that the two source electrodes must be physically, electrically unconnected, or completely “distinct” from one another. That argument does not pass muster for two reasons. First, it is inconsistent with the specification. In its description of Figure 1, the specification states that the “semiconductor device 10 also includes source regions **46**, **48** defined in the ‘P’ wells **26**, **28**, respectively. ... The semiconductor 10 also includes base electrode

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regions **42, 44**. ... A source metallic electrode **50, 52**, is formed over the source regions **46, 48**, respectively. In some embodiments, the source electrodes 50, 52, are coupled to form a unitary source electrode.” Ex. 1 at 6:63-7:7. The specification also teaches that the semiconductor device “may be electrically coupled with other electrical devices, sources, or the like via the electrodes 50, 52, 54, 58.” *Id.* at 7:19-21. Thus, the patent expressly contemplates that the source electrodes can be coupled. At the very least, the specification militates against the notion that the first and second electrodes cannot be connected.

Defendants’ interpretation disregards this intrinsic evidence, which is reason alone to reject it. In *Koninklijke Philips N.V. v. Wangs Alliance Corp.*, 2017 WL 6329616, at \*11-12 (D. Mass. Dec. 11, 2017), the accused infringer argued that the term “second LED” must be an LED “separate and distinct” from the first LED. The patentee argued that such a construction would “exclude embodiments where the first and second LEDs are physically or electrically connected.” *Id.* at \*11. The court agreed and refused to narrow the claims based on that disclosure in the specification. *Id.* at \*12. This same reasoning applies here. Defendants’ interpretation excludes this teaching.

Second, there is nothing in the intrinsic record that reflects the patentees’ intent to narrow the claims. Such narrowing requires clear and unmistakable language reflecting disclaimer of claim scope. *See Linear Technology Corp. v. ITC*, 566 F.3d 1049, 1055–56 (Fed. Cir. 2009) (“Indeed, there is nothing in the claim language or specification that supports narrowly construing the terms to require a specific structural requirement or entirely distinct ‘second’ and ‘third’ circuits.”); *Rovi Guides, Inc. v. Comcast Cable Comm’cns, LLC*, 796 F. App’x 735, 737 (Fed. Cir. 2020) (intrinsic record did not compel construction that first and second interactive electronic program guides be “separate and

distinct IPG applications”). Defendants and their expert cannot show that the intrinsic record compels adopting their interpretation that the source electrodes must be physically and electrically distinct.<sup>3</sup>

Finally, in the related *Wolfspeed* case, the court resolved the same dispute over the same claim limitations in the ’633 Patent. Quoting the same portions of the specification cited above, Judge Osteen rejected the same interpretation adopted by Defendants in this case, finding that “[i]n light of the specification, the terms ‘first’ and ‘second’ in the ’633 Patent do **not** require the first and second electrodes to be electrically or physically disconnected, as Defendant contends. The specification explicitly considers and includes the possibility of a single source electrode.” Ex. 6 at 18 (emphasis added). Notably, Judge Osteen found compelling the court’s analysis in *Koninklijke Philips* described above and added that “Defendant’s proposed construction would narrow the claims to exclude an expressly-included embodiment.” *Id.* at 19. Ultimately, the court ruled that the terms would have their plain and ordinary meaning, but the court’s guidance forecloses the same faulty interpretation the Defendants espouse here.

**C. Claim 10 is Not Indefinite**

<b>Term</b>	“wherein the JFET region has a width of about one micrometer”
<b>Dispute</b>	The parties dispute whether the term is indefinite.

Claim 9 of the ’633 Patent states “the JFET region having a width less than about three micrometers.” Defendants argued that the use of “about” rendered the claim indefinite because “a POSITA would not be able to determine either the upper boundary or lower boundary.” Dkt. 220 at 25. The Court ruled that the term is not indefinite and rejected Defendants’ upper/lower boundary

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<sup>3</sup> Defendants’ interpretation also does not make sense logically or technologically. The source electrodes in a device must at least be electronically connected given that they are connected to the same power supply, rely on the same gate voltage source, and must fire simultaneously.

arguments. *Id.* at 30-31. For the same reasons that claim 9’s use of “less than about three micrometers” is not indefinite, claim 10’s use of “about one micrometer” is not indefinite. Defendants cannot show otherwise by clear and convincing evidence.

As a threshold point, as this Court recognized (as Dr. Lipkin acknowledges at ¶ 856 of her Report), the use of terms of approximation like “about” are common in patent law and the Federal Circuit has confirmed that they are not indefinite. *Id.* at 30 (citing *Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1369 (Fed. Cir. 2005)); *see also Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1217 (Fed. Cir. 1995) (“The use of the word ‘about,’ avoids a strict numerical boundary to the specified parameter. Its range must be interpreted in its technologic and stylistic context.”). The term “about one micrometer” is readily understood in its technologic and stylistic context by persons of ordinary skill in the art.

Purdue’s expert, Dr. Bhat, explained during the initial claim construction proceedings regarding claim 9 that “the fabrication of SiC semiconductor devices is a manufacturing process that necessarily produces some uncertainty in the measurement of precise values in the manufactured devices.” Dkt. 70-1 at ¶ 32. Purdue’s claim construction expert in the *Wolfspeed* case, Dr. Shanfield likewise explained: “A POSITA would also reasonably understand the use of ‘about’ takes into account size variations resulting from manufacturing techniques that require tolerances, or slight deviations from the ideal device design.” Ex. 7 at ¶ 43; *see also id.* at ¶ 44 (“The use of ‘about’ is common practice because the fabrication of SiC semiconductor devices necessarily results in minor variations in feature dimensions because of the equipment used and the microscopic feature sizes.”).

Both experts agree that a 10% variation would be expected by a skilled artisan in the field. Dkt. 70-1 at 8; Ex. 8 (Shanfield Dep. Tr.) at 145:19-146:11; 152:15-22, 153:7-17.<sup>4</sup>

Recycling prior arguments, Defendants and their expert argue that claim 10 is indefinite because [REDACTED]

[REDACTED]” Ex. 3 (Lipkin Report) at ¶ 857.<sup>5</sup> This argument must be rejected for the same reasons the Court rejected it as to claim 9. First, it is undisputed that semiconductor manufacturing is not, as the Court stated, “an absolutely precise process” and that “there are small variations.” Dkt. 220 at 30. Even [REDACTED]

[REDACTED] [REDACTED]

[REDACTED]. Ex. 3 at ¶ 859. [REDACTED]

[REDACTED]

[REDACTED]. Ex. 5 at 37:19-23, 39:11-25. A skilled artisan would thus understand that “about” is not indefinite, but rather, at minimum, was intended to account for well-known fabrication variation. Dkt. 220 at 30.

Dr. Lipkin also opines that [REDACTED]

[REDACTED]

[REDACTED] Ex. 3 at ¶ 860. That is incorrect. The specification’s design guidance includes optimizing the width of the JFET region to achieve the twin aims of the invention, increased blocking voltage

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<sup>4</sup>In addition to the declaration of Dr. Bhat provided during the initial claim construction proceedings, Purdue submits the declaration of Dr. Stanley Shanfield, which was submitted in the *Wolfspeed* case, and excerpts from his claim construction deposition in that case.

<sup>5</sup>Dr. Lipkin also opines that [REDACTED] [REDACTED]” Ex. 3 at ¶ 857. But there is nothing in the definiteness statute that requires discussion of [REDACTED]. Indeed, in this sense, Dr. Lipkin perhaps conflates indefiniteness with other requirements of §112.

and reduced specific on-resistance. *See* Ex. 1 at 1:18-36. The specification highlights the relationship between the JFET region width and the reduction of specific on-resistance:

By forming a JFET region **30** with a doping concentration that is greater than the doping concentration of the drift layer **14**, the specific on-resistance of the semiconductor device **10** may be reduced compared to a MOSFET device having JFET regions and drift layers of substantially equal impurity concentrations. ***In some embodiments, the JFET region 30 is also fabricated to have a short width 36 relative to a typical DMOSFET device, which may reduce the specific on-resistance of the semiconductor device 10.***

*Id.* at 6:16-24 (emphasis added). The specification also states that “the shorter width **36** of the JFET region **30** compared to typical semiconductor device may tend to increase the blocking voltage of the semiconductor device **10** because such a configuration may reduce the magnetic field in the gate oxide layer above the JFET region **30**.” *Id.* at 6:45-50.

Dr. Shanfield further explains: “a POSITA would understand that a JFET region that was too wide would result in the field across the gate oxide in the blocking state to exceed the electric field for the oxide breakdown, thus damaging the gate oxide” and “the device designed must ensure that the field in the oxide remains below a critical value to avoid early failure of the oxide.” Ex. 7 at ¶ 46. In fact, this Court reached the same conclusion with respect to claim 9, noting that “the specification provides design guidance and objectives including optimizing the width to reduce the on-resistance and the electric field, and ensuring good forward current conduction and withstanding reverse blocking voltage. *See, e.g.*, Ex. 1 at 1:18–36.” Dkt. 220 at 30-31. Given these goals and reading these teachings, a skilled artisan would focus on keeping the JFET region widths as narrow as possible.

In the *Wolfspeed* case, Judge Osteen ruled that “about one micrometer” is not indefinite. Ex. 6 at 38-39. Like this Court before him, Judge Osteen rejected the argument that the term was indefinite in the absence of explicit upper and lower boundaries. *Id.* at 38 (“Third, the claim term – ‘the JFET region having a width of about one micrometer’ – is not indefinite due to the use of the word ‘about’

or due to the lack of a ‘range of acceptable widths above and below one micron.’”). Indeed, Judge Osteen found that “a width of ‘about’ or ‘approximately’ one micrometer appears straightforward on its face, requiring no narrowing of the claim scope.” *Id.* at 39.

Defendants failed to meet their burden to show claim 9 was indefinite. They come up short as to claim 10 as well.

#### **IV. Conclusion**

For the foregoing reasons, Purdue respectfully requests that the Court undertake additional claim construction to resolve the parties’ disputes regarding the scope of these claim terms and find that (1) the JFET region is “the region formed between the P wells and located between the first and second source regions,” (2) the first and second source electrodes may be physically and/or electrically connected, and (3) claim 10 is not indefinite.

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Respectfully submitted,

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**CERTIFICATE OF SERVICE**

In accordance with Federal Rule of Civil Procedure 5 and Local Rule CV-5, I hereby certify that a true and correct copy of the foregoing has been served on counsel for Defendants VIA ECF and email on August 8, 2023.

/s/ Michael W. Shore